

# **MISSOURI DWI OFFENDERS: THE LAST FIVE YEARS**

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## Missouri DWI Offenders: The Last Five Years

This report summarizes Missouri DWI (or BAC) offender-related information from July 1, 1994 through June 30, 1999. It provides statistical information on Missouri DWI offenders. Information is summarized in tables and graphs. **There are a total of 108,473 Missouri DWI (or BAC) offenders represented.**

The data contained herein was obtained from the Driver Risk Inventory, and more recently the Driver Risk Inventory-II (DRI-II). The DRI-II has six measures or scales. These scales include: **Truthfulness Scale, Alcohol Scale, Drugs Scale, Substance Abuse/Dependency Scale, Driver Risk Scale, and the Stress Coping Abilities.** The Substance Abuse/Dependency Scale, which was added to the DRI in 1998, classifies offenders according to DSM-IV criteria.

This report is dedicated to the memory of Ed Corcoran, who was there at the beginning. We would also like to acknowledge Dave Fleming for his continued support. This report is provided as a professional courtesy to Missouri SATOP/ARTOP/ADEP DWI offender screening agencies.

## Highlights

- There were approximately 24,000 Missouri DWI or BAC offenders administered the Driver Risk Inventory annually from 1996 through 1999.
- 83 percent of DWI or BAC offenders were male.
- From 1995 to 1999 the number of first time offenders declined. Males declined 8.2 percent and females declined 4.7 percent.
- Male multiple offenders (2 or 3 DWI or BAC arrests) increased by 14.4 percent from 1995 to 1999. Female multiple offenders increased by 20.1 percent.
- Male chronic offenders (4 or more DWI or BAC arrests) increased by 65.4 percent from 1995 to 1999. Female chronic offenders remained relatively constant.
- There was relatively no change in average BAC level at time of arrest from 1995 to 1999. The average BAC level in 1999 was 0.149 for males and 0.153 for females.
- Approximately two-thirds of the offenders were in the program due to a DWI.
- Administrative Suspensions made up about 12 to 15 percent of the offenders.
- DRI-II reliability was demonstrated by coefficient alphas of .88 or higher for all DRI-II scales. Validity of the DRI-II was demonstrated by correct identification of 98.5 percent of problem drinkers and discriminant analyses for multiple offenders.
- Accuracy of the DRI-II was demonstrated by the close approximation, within 1.5 percent, of obtained risk range percentages for all DRI-II scales to predicted percentages.

### DWI or BAC Offenders

The number of DWI or BAC offenders tested with the Driver Risk Inventory is presented in Table 1. Use of the DRI statewide in Missouri began in 1994 with agencies coming on board throughout the year. Following this first startup year the number of tests administered each year was consistently at or near 24,000 tests. Approximately 83 percent of the offenders tested during the five-year period of 1995 through 1999 were males. The percent change decline in male offenders from 1995 to 1999 was 2.6 percent. In contrast, there has been a 2.6 percent increase in female DWI or BAC offenders from 1995 to 1999. These results are shown in Figure 1.

**Table 1. DWI or BAC Offenders Tested, 1995 – 1999**  
**Number and Percent of Offenders by Gender**

	1995	1996	1997	1998	1999
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## DWI or BAC Arrests by Offender Status

DWI or BAC arrests are summarized in Table 2 in terms of offender status. First offenders are offenders who were arrested for DWI or BAC for the first time, whereas multiple offenders have been arrested for DWI or BAC 2 or 3 times. Chronic offenders are offenders who had 4 or more DWI or BAC arrests.

There were higher percentages of males who were multiple and chronic offenders than females. Both males and females show a decrease in first offenders and increases in multiple and chronic offenders. However, male multiple and chronic offenders are consistently higher than females by about 13 percent. The percent change decline in first offenders from 1995 to 1999 for males was 8.2 percent, for females it was 4.7 percent.

Male multiple offenders (2 or 3 DWI or BAC arrests) increased by 14.4 percent from 1995 to 1999 and the female multiple offenders increased by 20.1 percent. This increase is due to offenders receiving a second DWI or BAC arrest. In terms of percentage of all offenders, multiple offenders make up from 27 to 32 percent of DWI or BAC offenders.

Male chronic offenders (4 or more DWI or BAC arrests) increased by 65.4 percent from 1995 to 1999, whereas, female chronic offenders remained relatively constant. Even though chronic offenders make up a small portion of all offenders, their numbers are increasing.

Table 2. DWI or BAC Arrests  
Percent by Offender Status and Gender

		1995	1996	1997	1998	1999
Males	First Offenders	69.6	67.6	63.2	63.7	63.9
	Multiple Offenders	27.8	29.4	32.3	32.1	31.8
	Chronic Offenders	2.6	3.0	4.5	4.2	4.3
Females	First Offenders	81.1	80.8	78.3	76.9	77.3
	Multiple Offenders	17.9	18.3	20.2	21.9	21.5
	Chronic Offenders	1.0	1.0	1.5	1.2	1.2

### Reason in Program

In 1999, approximately 72 percent of the offenders were tested with the Driver Risk Inventory due to a DWI arrest. Administrative Suspension, Court Order and Other are other reasons for offenders to take the DRI. Table 3 summarizes the percent of offenders by Reason in Program for each of the four categories.

Table 3 demonstrates that the DWI Reason in Program increased during the five years studied. The percent change increase in DWI was 10.5 percent from 1995 to 1999. Administrative Suspension fluctuated down then up. In 1999 there were 4.7 percent more Administrative Suspensions than in 1995. Court Order declined during this five-year period. The percent change decline in Court Order was 40.4 percent. The “percent change” refers to the amount of change (increase or decline) in the current data from the previous data. The formula to calculate percent change is ((previous – current) / previous). It indicates how much change has occurred.

Table 3. Reason in Program  
Percent of Offenders

	1995	1996	1997	1998	1999
DWI	65.0	64.6	68.9	72.5	71.8
Administrative Suspension	14.8	14.8	13.3	12.3	15.5
Court Order	16.6	17.3	15.0	12.7	9.9
Other	3.6	3.2	2.8	2.6	2.8

### Prior SATOP/ARTOP/ADEP Attendance

In 1999, over one-fourth of the males and over 18 percent of the females had previously attended an SATOP, ARTOP or ADEP program. This data has essentially remained unchanged during the five-year period studied.

Table 4. Prior SATOP/ARTOP/ADEP Attendance  
Percent by Gender

	1995	1996	1997	1998	1999
Males	27.1	27.1	26.0	26.1	27.2
Females	19.5	17.5	16.0	17.6	18.3

### Blood Alcohol Concentration (BAC) Level at Time of Arrest

Table 5 presents BAC level at time of arrest for offenders who reported their BAC, offenders who refused the BAC test and offenders who did not provide their BAC information (denoted by Not Available). BAC levels are reported for three categories: 0.01 to 0.10, 0.11 to 0.16, and 0.17 or higher.

For those offenders who reported their BAC, one-fourth to one-third had BAC levels of 0.11 to 0.16 percent. Fifteen to 22 percent of the offenders had BAC levels of 0.17 or higher. Over one-third to nearly one-half of the offenders did not provide their BAC level at time of arrest on their DRI answer sheets.

There was a decrease in BAC levels of 0.11 or higher from 1995 to 1999. The percent change decrease in BAC of 0.11 to 0.16 was 17.0 percent and the percent change decrease in BAC of 0.17 or higher was 21.6 percent. These results would suggest that offenders may be less intoxicated at the time of their arrest, however, the average BAC level, shown in Table 6, did not change appreciably from 1995 to 1999.

In 1999, there was a jump in the percent of offenders who refused the BAC test at the time of their arrest. The percent of refusals in 1999 was more than double that of the previous year. Up until 1999 there had been a slight and steady increase in the percent of refusals.

Table 5. BAC Level at Time of Arrest

BAC	1995	1996	1997	1998	1999
0.01 - 0.10	9.4	9.4	9.0	9.5	9.7
0.11 – 0.16	33.5	31.1	28.9	26.1	27.8
0.17 or higher	22.2	19.3	17.4	14.9	17.4
Refused	0.4	1.1	2.5	3.0	7.8
Not Available	34.6	39.1	42.2	46.4	37.3

Table 6. Average BAC Level at Time of Arrest by Gender

	1995	1996	1997	1998	1999
Males	0.152	0.150	0.149	0.146	0.149
Females	0.153	0.153	0.151	0.150	0.153

## Driver Risk Inventory-II, Reliability, Validity and Accuracy

Any approach to assessment, or measurement must meet the criteria of reliability and validity. Reliability refers to an instrument's consistency of results regardless of who uses it. This means that the outcome must be objective, verifiable, and reproducible. Validity refers to accuracy. Psychometric principles and computer technology insures reliability, accuracy, objectivity, practicality and cost-effectiveness.

### Reliability

Within-test or inter-item reliability measures to what extent items in each scale consistently measure the particular factor the scale was designed to measure. The most common method of reporting inter-item reliability is with coefficient alpha. The Driver Risk Inventory has maintained consistently high reliability coefficient alphas year after year. The 1999 reliability coefficient alphas for the DRI-II are presented in Table 7. The higher the alpha level the more reliable the scale is. Alphas above .85 are considered to be very reliable.

Table 7. Reliability of the Driver Risk Inventory-II (1999, N=22,913)  
All coefficient alphas are significant at p<.001.

<u>DRI-II SCALES</u>	<u>Coefficient Alphas</u>
Truthfulness Scale	.88
Alcohol Scale	.92
Driver Risk Scale	.88
Drug Scale	.90
<u>Stress Coping Abilities</u>	<u>.91</u>
Dependency Items*	.87
Abuse Items*	.83

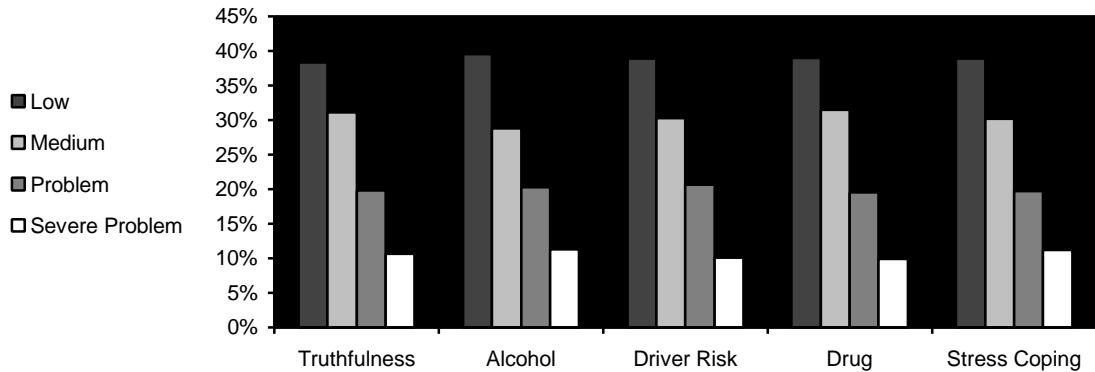
\*The Substance Abuse/Dependency Classification Scale is a “classification” as opposed to a measurement scale. These items are included because they demonstrate that DSM-IV dependency and abuse items are also consistent and reliable.

These results show that the Driver Risk Inventory-II is a very reliable risk assessment instrument.

### Accuracy

The five measurement scales of the DRI-II establish offender risk and categorize offenders' scale scores into one of four risk ranges: low, medium, problem and severe problem. The expected percentage of offenders scoring in each risk range is 39% in low risk, 30% in medium risk, 20% in problem risk and 11% in severe problem risk. From 1995 through 1999 the DRI-II has accurately established offender risk to within about two percent of the expected percentages for all DRI-II scales. This level of accuracy is achieved because DRI-II scoring procedures are standardized on the Missouri offender population itself. No other DWI offender assessment instrument can make that claim. The 1999 DRI-II scale score accuracy results, given as the difference between obtained and expected percentages in parentheses, is presented in Table 8.

Table 8. DRI-II Scale Score Accuracy (1999, N = 22,913)



Note: The Substance Abuse/Dependency Scale is a classification, not a measurement scale, consequently it is not included in this analysis.

As shown in Table 8, obtained risk range percentages for all risk categories and all DRI-II scales were within 1.5 percentage points of predicted risk range percentages. These results demonstrate the accuracy of the Driver Risk Inventory-II.

### Validity

The 1999 summary report presented two types of validity analyses, discriminant validity and predictive validity. These analyses strongly validate the Driver Risk Inventory-II. Because DRI-II scales measure the severity of driving-related problems, it is expected that multiple offenders (offenders who have 2 or more arrests) would have higher scale scores than first offenders. Discriminant validity of the DRI-II was shown by significant scale score differences between first and multiple offenders. DRI-II Alcohol, Driver Risk, Drugs and Stress Coping Abilities scales demonstrated that multiple offenders scored significantly higher than first offenders. Truthfulness Scale scores showed that first offenders scored higher than multiple offenders scored. This may indicate that first offenders attempt to minimize their problems more than multiple offenders. These results support the discriminant validity of the DRI-II.

Predictive validity analyses demonstrated that the DRI-II Alcohol Scale correctly identified problem drinkers. 98.5 percent of the offenders who had been in treatment for alcohol problems scored in the problem risk range (70<sup>th</sup> percentile and above) on the Alcohol Scale. The DRI-II Alcohol Scale correctly identified nearly all of the offenders categorized as problem drinkers (had alcohol treatment). This is very accurate assessment.

## Offender Demographics

Offender demographic information for each of the years of this study is summarized in Tables 9 through 12. The average age of the DWI or BAC offenders was consistently at 34 years of age. There were no significant differences in average age between males and females. All other demographic categories: Race/Ethnic group, Education, and Marital Status, showed similar consistent data during this five-year period. There are no trends to this demographic data. There are fluctuations upward and downward, yet the percent change from year to year is small.

Table 9. Average Age of Offenders by Gender

		1995	1996	1997	1998	1999
Males	Age in Years	34.2	34.6	34.6	34.5	34.4
Females		33.9	34.0	34.2	34.3	33.7

Table 10. Race/Ethnic Group, Percent of Offenders

	1995	1996	1997	1998	1999
Caucasian	92.6	88.8	89.9	89.3	89.6
Black	5.0	8.0	7.0	7.3	7.0
Hispanic	1.4	2.0	2.0	2.2	1.9
Other	1.0	1.2	1.1	1.2	1.5

Table 11. Education, Percent of Offenders

	1995	1996	1997	1998	1999
Some High School	22.8	22.0	22.6	23.1	22.1
H. S. Graduate	46.3	46.2	46.4	46.4	46.1
Some College	21.7	21.7	21.0	21.0	22.0
College Graduate	9.2	10.0	10.0	9.5	9.8

Table 12. Marital Status, Percent of Offenders

	1995	1996	1997	1998	1999
Single	41.4	40.8	40.5	42.2	42.5
Married	27.8	28.3	27.8	26.6	26.9
Divorced	24.4	24.7	25.0	25.0	19.3
Separated	4.9	4.6	5.2	4.8	9.1
Widowed	1.4	1.5	1.5	1.4	2.2

## SUMMARY

This report summarizes test results for Missouri DWI (or BAC) offenders who were administered the Driver Risk Inventory and Driver Risk Inventory-II from July 1, 1994 through June 30, 1999. Data are summarized for each of the five years studied. After the startup year of July 1, 1994 through June 30, 1995, there were approximately 24,000 Missouri offenders tested with the DRI each year. There are a total of 108,473 Missouri DWI offenders represented.

The number of Missouri DWI (or BAC) offenders tested each year has remained fairly constant from 1996 through 1999 (the years following the startup year). However, the number of first time offenders tended to decrease. From 1995 to 1999 the percent change decline in first offenders was 8.2 percent for males and 4.7 for females. This means that there has been an increase in the number of multiple offenders. The majority of this change was for offenders who were arrested a second time.

There was very little change in Blood Alcohol Concentration (BAC) level at time of arrest during the five years studied. The average BAC level was relatively constant. In 1999, the average BAC of males was 0.149 and the average BAC of females was 0.153.

Offender demographics also show remarkable consistency from year to year. The average age of offenders was 34 years of age. Race/Ethnic Group, Education and Marital Status all show very little fluctuation from year to year.

Reliability statistics show consistently high reliability coefficients for all DRI-II scales year after year and demonstrate that the DRI-II is a highly reliable assessment instrument. In 1999, all scales achieve coefficient alphas of .88 or higher. Validity of the DRI-II was demonstrated in several studies. The DRI-II correctly identified 98.5 percent of problem drinkers. DRI-II scales accurately differentiate between first and multiple offenders. DRI-II scales correlate highly with criterion measures. These studies support the validity of the DRI-II.

The DRI-II has been shown to accurately establish offender risk to within about two percent of expected percentages for all DRI-II scales. In 1999, all DRI-II scales risk range percentages were within 1.5 percent of expected percentages. This is very accurate assessment.